US Army Medical Research and Materiel

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Digital Radiographic Sensor View Capture

This invention is a method and mechanism for providing a dental imaging system that allows the user to obtain, manipulate, process, and electronically store and display intraoral occlusal view dental data. It permits computerized digital radiography (CDR)-systems to completely replace all sizes of intraoral conventional dental radiographic film. A CDR-system uses a charge-coupled device (CCD)-array of sensors to capture increases in the sizes of target areas. Current versions of CDR systems do not have occlusal size intraoral sensors due to several financial and technical difficulties associated with them. The invention avoids those cost and technical difficulties.

Traditional non-CDR dental imaging systems use radiographic film to obtain and capture dental images of a patient's teeth and associated bony structures. CDR systems, unlike non-CDR systems, utilize CCD-array sensors, rather than radiographic film, to directly obtain digital dental images. Since CDR systems allow the dental images to be captured directly to digital forms, the invention contributes towards the "paperless" dental office of the future. Target area images may be combined into one large occlusal composite image.

In one implementation, the multiple images are taken in [illegible] tially the same location relative to each other by affixing a portion of a CCD-array sensor positioning mechanism in the patient's mouth. The dentist checks for the fit of stabilization portion on the patient's maxillary [illegible] injects a flexible fast set substance, [illegible]ysiloxane (PVS), which is typically used to take dental impressions, along the maxillary or mandibular occlusal surface. Once the PVS has set, it can be used to re-position the sensor for subsequent images.

Features and advantages:

- **Permits all current intraoral dental sensors to be used to capture occlusal radiographic images**
- **Eliminates need for a digital radiographic dental practice to maintain conventional occlusal radiographic film, backlit viewers, and film processing and darkroom capabilities**
- **Stores images in digital format, *e.g.*, on CD-ROM or magnetic disk drive**
- **Contributes towards a paperless office**

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